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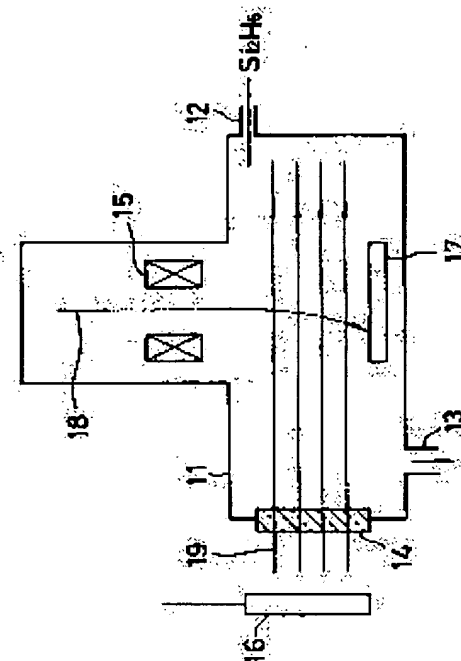
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(54) FORMATION OF FILM

(57)Abstract:

PURPOSE: To form a film selectively and moreover to provide favorable controllability at the chemical vapor phase deposition method utilizing light by a method wherein projection of light is used only to dissolve source gas, and an electron beam is used only to heat selectively a semiconductor substrate.

CONSTITUTION: A chemically washed semiconductor substrate 17 is arranged in a reaction chamber 11. A vacuum pump connected to an exhaust tube 13 is operated to exhaust the inside of the reaction chamber 11 to a high vacuum. Disilane is introduced in a proper vacuum condition from a source gas introducing tube 12 and flowed. Ultraviolet rays 19 radiated from a laser beam generator 16 are introduced from an ultraviolet rays transmitting window 14 as to be made in parallel with the surface of the semiconductor substrate 17, and projected to the disilane gas. An electron beam 18 is scanned on the semiconductor substrate 17 by deflecting according to action of an X-Y electromagnetic deflection coil 15. Accordingly, the temperature of the semiconductor substrate 17 is risen selectively, and silicon is deposited by reacting with activated gas at the part thereof. At this time, when energy of the electron beam is changed, silicon to be deposited can be grown to any kind of an amorphous, polycrystalline or single crystal film.



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